

THE
PSYCHOLOGICAL BULLETIN

THE TERM EGO AND THE TERM SELF.

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The terms ego and self at present are used interchangeably. I contend that in the current use of these terms are to be found two meanings at once so distinct and so fundamental that it would be a great advantage to retain and limit to one of these meanings the term ego, and reserve to the other the term self. By self I would indicate always an idea present in the self-consciousness of any individual; by ego, the individual who is or can be self-conscious, who has or may have the sense of self and not-self.

The idea an individual has of himself is often expressed by the term self, rather than by the phrase, sense *of* self. Thus Angell (*Psychology*, p. 390) means by the moral self not the individual, but his 'conception of' himself, a part of the moral situation as it appears in his individual consciousness. In accounts of the development of self-consciousness, such as Baldwin's, the term self is used in this way.

The term self is also used to indicate the individual who is or may be self-conscious. Thus for Angell the self is 'a life phenomenon, with periods of growth and expansion, periods of maturity, and periods of decay and disintegration'; it is the organism, and it is also the memory; in brief it is the 'psychophysical organism' (cf. *op. cit.*, pp. 6, 383 and 396). For this use I would substitute the term ego.

Bradley (*Appearance and Reality*, 1893, p. 77) in one and the same passage uses self in both the ways I have described. He says the self is 'a mass of feelings, thoughts, sensations,' which *includes* 'self and not-self' and what is not distinguished as either, in short the total filling of the man's soul.' An apparent ambiguity is avoided if we say in this case, the ego, the individual, includes self and not-self, etc.

This distinction I urge as a matter of practical convenience. There is one set of problems concerned with the concept of the ego, the living unity of the individual capable of self-consciousness; there is another set dealing with the concept self, the essential element of self-consciousness. Among the former problems are those of the physiological conditions of consciousness, and of the changes in consciousness; also the general problems of education and the social sciences. Among the latter appear the more specific problems of self-consciousness, the moral questions of self-realization and responsibility; the description of the several 'self-feelings,' which still lack proper consideration; and the description of the religious consciousness.

It is in connection with ethical problems that the term 'self' has come into vogue. For instance, Baldwin, in his *Social and Ethical Interpretations*, commences by using the phrases 'sense of' and 'thought of' self to indicate the essential content of self-consciousness in its antithesis to the not-self. But the complexity of that 'sense of' self forces him to a simplification of terms. He says (p. 40) that the child's 'thought of self' 'is a self of habit or a self of accommodation.' And thenceforward we find that, in such expressions as 'habitual self,' 'accommodating self,' 'social self,' self now means not the individual thinking and thought of, but the *thought* the individual has of himself. In a future paper I shall show that 'self' in this restricted sense is even more complex, and the distinction between the several 'selves' of self-consciousness even greater than has yet been shown. The study of the self in the narrower sense as the essential content of self-consciousness has not yet received adequate attention; and this neglect I attribute in part to the lack of a distinct term. It is but natural, where two terms are used indifferently and carelessly for two distinct meanings, that the problems connected with each should be obscured by the obscurity of terminology.

The value of distinguishing the meanings by the two terms is fairly well exemplified in the case of the derivatives, egoistic and selfish. Egoistic actions, egoistic impulses or instincts are such as result primarily in the good of the agent. Selfish action, selfish impulses or instincts, such as pride, are those that are directed consciously toward the self. It has been contended that egoism and altruism are opposites; and also that they are not. If egoism is defined as above it is clear that egoism and altruism are different but not opposite. In that sense the opposite of egoism, non-egoism, has no particular moral significance. But if by egoism is meant selfishness, there is an opposite of moral significance, *viz.*, unselfishness. The

question and contention here arise chiefly because egoism is used in two senses, one of which I would call selfishness.

The philosopher is unselfish who, without thought of benefiting himself, does as a fact find joy in his system-building. If his system is worthless his conduct is egoistic, though none the less unselfish. The politician who seeks the pride of office is selfish. His methods of attaining his selfish end may, however, be in the highest degree altruistic, because they benefit others, even though they benefit himself more. Selfishness is to be commended in certain relations, doubtless, while egoism is approved in other relations. Unselfishness includes both the case where the object and motive is definitely the not-self in its antithesis to the self, and also the case where that antithesis does not occur, and the individual faces a problem in the attitude of disinterestedness or *aloofness*. The former only is self-sacrifice. Non egoism, on the other hand, includes mere altruism, where the action *results* in another's good without regard to whether the agent is benefited or not; and also that specific form of altruism where, in promoting the good of another, the agent effects his own ill.

The first to use the term 'self,' I believe, was Hume. For him it is a 'bundle or collection of different perceptions'; it is an object of experience in which a man recognizes himself. Again, he speaks of it as the object of such emotions as pride and self-love. It is clear that the use to which I would limit the term self accords with this its original use. On the other hand the term ego has commonly been used to denote the unity of the individual, whether or not that individual unity appeared and was recognized as self in the individual consciousness. Kant's transcendental ego is such a unity; and those who contend that there is always a *subject* of consciousness, which somehow 'avoids direct observation,' and never is an object of consciousness, have a similar conception. Such a subject I would call an ego; and *if the subject is also an object*, if it is the 'thinker' of James, or the 'psychophysical organism' of modern psychology, it still is the unity of the individual, and is subsumed under the term ego, as I would use it.

This paper is preliminary to one in which I shall point out the many senses in which the term 'self,' even in the narrower sense here described, is used. I shall show the confusion that occasionally arises from the neglect of these distinctions, and the advantages to be gained by observing them. Before presenting such a paper it was first necessary to remove the ambiguities that result from the use of self to indicate not merely the essential content of self-consciousness but also the individual capable of self-consciousness.

PSYCHOLOGICAL LITERATURE.

SYSTEMATIC TREATISES.

Elements of Psychology. EDWARD L. THORNDIKE. New York, A. G. Seiler, 1905. Pp. 351.

Of the elementary books on psychology which have appeared in recent years, this volume by Professor Thorndike seems, to the present reviewer, to be one of the most useful and interesting. Its arrangement and distribution of the subject matter; its adequate and lucid exposition and its well formulated definitions make it useful; while its wealth of examples drawn from common life makes it interesting. The book is divided into three parts: descriptive psychology, physiological psychology and dynamic psychology. In the first part the topics treated are: feelings of things present, sensations and percepts; feelings of things absent, images and memories; feelings of fact, relations, meanings and judgments; feelings of personal condition, emotions; feelings of willing; general characteristics of mental states; and the functions of mental states. The exposition of these topics is straightforward and clear. The author is able to say much, both in small compass and in transparent language. The doctrine is, for the most part, identical with that body of observation which is now generally recognized as constituting the essentials of descriptive psychology. The new classification of mental states (pp. 108-111) attracts one's attention. The principle of classification is the 'directness' in which feelings stand to their objects. According to this principle, feelings are divided into three classes: (1) feelings which are what they stand for, such as blue, sleepiness, suffocation, terror, rage and length; (2) feelings which are like what they stand for, such as "percepts and images (and the pseudo-emotions), which have objects more or less, but always somewhat, like themselves. The feeling of blue which we call the feeling of 'the sky,' the feeling of a white rectangle which we call a percept of a sheet of paper, the image of a line an inch long — each of these refers to something which it is not exactly but only in part" (p. 109); (3) feelings which are unlike what they stand for, such as feelings of intellectual relations, of meanings and judgments. The three classes are designated, respectively, feelings of the first, second and third intention. This classification reminds one of Locke's division of ideas, according to their

conformity or non-conformity to an archetype within the mind or out of it. Physiological psychology is treated in three main topics: the constituents of the nervous system; the action of the nervous system; and the nervous system and mental states. No description of the gross features of the nervous system is given. For, in the author's opinion, it 'offers little instruction to the student of mental life.' In this connection it may be said that while, undoubtedly, the finer structure of the nervous system, along with what is known of the physiology of nerve cells, is the best knowledge for the psychologist, on the other hand, without some first-hand acquaintance with the occurrence and distribution of cell-bodies and fibers, such knowledge is likely to lead to a false familiarity with the system as a whole. An admirable feature of the illustrations is that, for the most part, they are reproductions of actual microscopic preparations. The serviceableness of the neurone theory for psychological explanation is again evinced by this book. But already the retreat from that position has been sounded. What changes in physiological theory, and consequently in psychological theory, the fibrillar connection of nerve cells will make, remain at present undeterminable. The neurone theory works in so well with current psychology that it would be a pity to lose so useful an hypothesis. Dynamic psychology is defined as the science of the mind in action (p. 184). The importance, for the author, of this aspect of psychology, is shown by the fact that it receives more space than either of the other parts. Two main subjects are considered; instincts and capacities, and habits. The latter subject is divided into the connections set up between sense stimuli and mental states; connections set up between mental states; and connections set up between mental states and acts. In one case only does the view of the author run counter to orthodox opinion. As he points out in the preface, the author is unable to hold that the motives to action are only resident or remote sensations of the movement itself. The view advocated is that any mental state can serve as a motive.

Idées générales de Psychologie. G. H. LUQUET. (Bibliothèque de Philos. Contemp.) Paris, F. Alcan, 1906. Pp. 295.

The author has not attempted to write a text-book or manual of psychology, treating of the particular phenomena of mind; his purpose, rather, has been to give some account of those more general aspects of mental life which in more technical works are so often left unnoticed. While his attempt, in the main, has been reasonably successful, the chief defect of the book seems to be a lack of concreteness

and of illustration. The general aspects of mental life have been seized upon with sufficient sagacity; but their force and value for consciousness is not brought home by example and illustration. The first chapter, *The Spontaneous Consciousness*, points out the paradoxical nature of mental states: that they are at once both knower and known. That each state of consciousness belongs to the experience of a self; that each state is related to the future and to the past — in short, that consciousness is a stream — is the gist of the second chapter. One has only to compare James's chapter on the stream of thought with this (the second) of the author, to realize how much has been lost by omitting illustrative examples. Mental phenomena are divided into three classes: sensibility, action and intelligence. Each of these classes is further divided into three subdivisions, according as the facts are elaborated, spontaneous or elementary. Since intelligence does not conveniently fit into this schema, another has been provided. The phenomena of intelligence are dichotomized as empirical or extra-empirical facts. Memory, imagination, attention, association lie in the first class; reason is alone in the second class. The remainder of the book consists in tracing out, with the help of this classification, some of the more obvious characteristics of mental life; such as its solidarity, its continuity, its selectiveness and its practical efficiency.

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Le sentiment et la pensée et leur principaux aspects physiologiques.

ANDRÉ GODFERNAUX. Deuxième édition, revue. Paris, Alcan, 1906. Pp. xii + 203.

The place and importance of affective and motor phenomena in mental life, the relations of these phenomena to one another and, in particular, the influence of feeling on thought, are presumably more fully recognized and better understood now than when twelve years ago Godfernaux first published the above essay dealing with these matters in a somewhat novel manner. The work received at the time adequate, if possibly somewhat too complimentary, notice in these pages from the competent hand of Professor James, whose article the author refers to in the preface to the present edition as one of great interest. As this second edition brings nothing new to the argument, the revision extending only to unimportant details, the reader may be referred for an account and critical estimate of the work to the original notice (*PSYCHOLOGICAL REVIEW*, 1894, I., pp. 624-627). It is greatly to be regretted that the author has not followed James's suggestion to

improve in a second edition the exposition of his doctrine of motor synthesis, which is his final interpretation of mental synthesis (p. 154). This doctrine still remains obscure in the extreme. And the same is true of the doctrine of feeling (*sentiment*) as vague, diffuse consciousness corresponding to vague, diffuse movement, of thought as delimited consciousness corresponding to localized, systematized movement, and of emotion as a concrete and definite form of feeling corresponding to motor tendencies. It is not that these doctrines are false, but they are altogether too abstract and ill-defined. With all recognition of the author's learning and ability one cannot but feel that one is dealing here with a programme rather than with a thought-out conception. One feels the lack of a clearly defined point of view, such as the biological point of view adopted by Angell and other American psychologists, in the light of which the motor and affective phenomena here so much insisted on obtain a real significance. In the absence of some such controlling conception the rôle assigned to movement and feeling seems exaggerated. There appears to be no good reason why the affective life and the movements underlying it should be regarded as more primary and fundamental than any of the other now differentiated aspects of mind. It is the author's view, indeed, that this primacy holds only for the individual, while in the race thought is primary and only gradually becomes transformed into feeling (p. 200). If anything, the reverse would seem to be true. But the point cannot well be considered apart from a general genetic theory, which is here wanting, and in the light of more exactly defined psychological conceptions.

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THE SELF.

The Psychological Self and the Actual Personality. J. A. LEIGHTON. *Philos. Rev.*, 1905, XIV., 668-683.

The first section of this article may be taken as a criticism of an exclusively psychological analysis of experience. The structural psychologist, anxious to win a place for himself among the scientists, is in serious danger of becoming a mere physiologist. In his worship of the scientific ideal exactitude he has lost his hold upon the self of concrete experience. He destroys the living dynamic quality of selfhood in the act of analyzing it. The result of his attempt to reduce the unity of consciousness to its simplest terms is the discovery of a number of elements, artifacts which are then combined by artificial

laws, and the final outcome is a psychologically created self completely out of touch with reality. Since it is an essential characteristic of consciousness to flow and change as well as to exist, the actual self is ever beyond the reach of the structural psychologist. The result of retrospective observation is an objectified materialized self, having space and time relations. The true self of immediate action and feeling can never be given as an object, is immaterial, transcends space and time. The recognition of this fact accounts for the rise of a functional psychology which attempts to do justice to this active principle of selfhood. It emphasizes the conative aspect of consciousness, and conceives of the self as an end-positing, end-attaining activity. The functional point of view is to be criticized, however, for dealing too exclusively with biological categories. It fails to give us the reality of the actual self in not allowing sufficiently for the mental and spiritual character of man's environment.

If psychology is to be of practical use to education, law, criminology and the normative sciences it must regain its connection with the self of everyday life. It may do this, the author believes, by substituting for its present method one which may be called the 'meta-historical' or 'noölogical.' The conditions for the evolution of selfhood are preëminently social, historical and cultural. The actual self is to be found then in a study of the historical systems of thought, of the culture systems of mankind. These systems are to be found embodied in codes of morality, manners and politics, in current scientific opinion, in labor regulations, in religious doctrines. Under the influence of these institutions representing the spiritual development of man, the individual comes to a consciousness of self. Indeed, his attainment of selfhood is dependent upon his conscious reaction to or rather into this social material, transforming and re-creating it. That which the greatest makers of the spiritual history of man—Christ, Luther, Raphael, Galileo—have done, each individual does on a small scale. So civilization comes to be the record of man's shifting emphasis upon the values of the various partial culture systems, æsthetic, ethical and intellectual. It is the result of a continuous process of rejection and assimilation of social standards by the individual mind. Within this evolutionary process the actual self is found as its nodal point or creative center. Hence a psychological analysis of the self has value only when it is continually supplemented by an historical and a sociological investigation of the whole culture process of society.

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SENSATION AND PERCEPTION.

Normale und anomale Farbensysteme. A. KIRSCHMANN. Archiv f. d. ges. Psychol., 1906, VI., 397-424.

In this article the author is concerned chiefly with the schematization, by means of Wundt's double color pyramid, of the manifold of light and color for the normal eye, and for various types of abnormal eyes. Physical and physiological conditions are excluded, and the various visual qualities and intensities are exhaustively considered, and located in the spatial representation. For those interested in the analogical description of visual sensation the article is exceedingly valuable on account of its comprehensiveness and acuteness.

In the incidental discussion of fact and theory relevant to the main purpose there are several points of interest to the general student of color psychology. The first is the author's assumption that color systems must be monochromatic, dichromatic, or inclusive of an infinite number of qualities. This is based on the analogy of point, line, and plane in the geometrical representation, and is finally developed into an argument against the theory of a definite number of fundamental colors. Another important assumption is that the component theories demand that the neutral band in the case of a color-blind patient should fall in a definite place in the spectrum, determined by the 'class' in which the patient is placed. It is also implied, though perhaps not intended, that the component theories fail to provide for neutral bands in the purple of the converse spectrum. Adherents of the three-color theory would doubtless be interested in further explanation on both of these points. The author holds that the identification of the color actually seen in peripheral vision is very uncertain and misleading because of the impossibility of direct comparison, and cites obvious errors in other types of introspection to show the possibility of mistakes of serious character. One new case of abnormal color vision is reported. The patient reports that he sees only yellow and blue, and insists that the yellow is a 'cold' and the blue a 'warm' color.

The author promises a second article in which he will deal with cases of color-blindness offering special difficulties.

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Differenzttöne und Konsonanz. C. STUMPF. Zeitsch. für Psychol. u. Physiol. d. Sinn., 1905, XXXIX., 269-283.

In this article Stumpf subjects F. Krueger's theory of dissonance to a searching criticism. Krueger has stated (*Phil. Studien*, vols.

16 and 17, *Archiv f. d. ges. Psych.*, vols. 1 and 2) that two simultaneous tones give rise to five difference-tones, two or more of which may fall together. The rates of these difference-tones may be found mathematically by continuously subtracting the smallest from the next largest vibration rate. Thus if the primary tones have the ratio 7 : 12, the difference-tones will be represented by 5, 2, 3, 1, 1. If any two of these difference-tones fall closely enough together they produce beats, and a rough, vague, disagreeable intermediate-tone is heard.

According to Krueger it is to these beating difference-tones and the resulting intermediate-tone that dissonance is due. In a consonance there are no beats of the difference-tones, and therefore no intermediate-tone. Two or more of the difference-tones fall together, thereby giving greater unity and simplicity to the clang, and thus the consonance approximates more nearly a single tone. Every dissonance is apprehended as a discordant consonance, *i. e.*, a slight deviation from a simple mathematical ratio, and contains as its lowest portion a discordant prime, in other words, beats, and a resulting intermediate-tone.

Stumpf in attacking this theory of dissonance accepts provisionally Krueger's statements as to the five difference-tones and the intermediate-tone resulting from their beating, and proceeds to show that according to this criterion a number of well recognized musical dissonances would have to be called consonances. For example, primary tones with the ratios 8 : 11, 7 : 10, 5 : 7, etc., if multiplied by 100 are still decidedly dissonant, and yet their difference-tones lie too far apart to give beats. If it be said in answer to this that difference-tones beat when much less close together than primary tones have to be, Stumpf points out that recognized consonances, such as the major third, the major sixth, and even the fourth, will be turned into dissonances, and we shall have no consonances left but the octave and the fifth. Moreover, in none of the dissonances mentioned by Stumpf do we find a discordant prime in the lowest portion of the clang as the theory demands, but rather such ratios as 1 : 2, 1 : 3, 3 : 5, 2 : 5, etc.

As a further objection to the theory, Stumpf calls attention to the fact that if two dissonant forks are sounded and held one to either ear the beats and difference-tones become quite imperceptible, while the dissonance remains undiminished. The fundamental error of Krueger's whole theory of dissonance, according to Stumpf, is that it is based upon imperfect or discordant consonance, that is, upon very slight deviations from the simplest ratios. It is true that difference-tones do enter into such discordant consonances, as was pointed out by

Helmholtz. Krueger has chosen all his examples from these discordant consonances and has neglected the large range of musical dissonances indicated by Stumpf. It will be interesting to see whether Krueger can meet Stumpf's objections in the further development of his theory.

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Beitrag zur Frage der Parosmie. H. BEYER. *Ztsch. f. Psych. und Phys. d. Sinnesorgane*, XXXV., 50-61.

Nasales Schnecken. H. BEYER. *Ibid.*, 260-267.

In the first of these two papers Dr. Beyer describes two cases of parosmia and of partial anosmia, and discusses both in relation to Zwaardemaker's theory of specific smell-energies and of smell localization. The clinical facts enumerated seem to fit but roughly into the details of this theory. On the other hand, they certainly buttress the general doctrine that there are certain specific energies of smell. They also support Zwaardemaker's supposition that when an area on the olfactory membrane is subjected to maximal stimulation other areas lose in sensibility in proportion to their distance from the area of maximal stimulation.

In the second of the two papers the writer opposes Zwaardemaker's conjecture that the impressions of sweet and of bitter which are obtained by inhaling the fumes of chloroform and of ether respectively may be mediated by epithelial taste-buds found in the olfactory membrane of the nose. Against this supposition Dr. Beyer brings evidence to show that when, on the one hand, these fumes are introduced into the nostril they are not tasted unless the choana is open, and that when, on the other hand, the fumes are introduced into the pharynx, the tastes are localized in the nose if the choanæ are free. Finally, Dr. Beyer notes that the epithelial buds which have been found in the olfactory region in man may be simply intra-epithelial glands.

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Die Normaltäuschungen in der Lagewahrnehmungen. C. SPEARMAN. *Wundt's Psychologische Studien*, 1905, I., 388-493.

A summary, both historical and critical, of the previous studies on cutaneous localization introduces the present report. Many experimenters have failed accurately to distinguish *Raum-*, *Orts-* and *Lagewahrnehmungen*. The first of these refers to tests for the threshold of separateness for two tactual stimuli; the second to localization tests

where the observer tries to touch again the stimulated spot; and the third to tests where the whole region is hidden from view and only the single stimulus is applied. The author considers only the *Lagewahrnehmungen*.

In the method most generally employed the arm was hidden by a finely meshed screen stretched horizontally a little distance above it. Through this screen the stimulus point was pushed and the blindfolded observer touched the screen with a dull pointer over the spot where he located the touch sensation. The error was determined by counting the meshes of the screen, there being seven to the centimeter. This apparatus was modified and complicated as required.

Much stress is placed upon articular and segmental illusions. The difference between these two is best indicated physiologically. The articular illusions arise in connection with the activity of end organs found principally in the joints, as Pacinian corpuscles; the segmental illusions with the activity of organs situated in the skin. In both illusions a constant factor, relating to the direction of the error, and a variable factor, relating to the delicacy of localization, appear. Measurements of illusion were made under varying conditions, as localization on different parts of the body, effect of movement, strain, pain, mode of observing, attention, blindness. Visual localization is compared with tactual.

The results obtained are not unusually interesting and, it would seem, are scarcely in keeping with the pretentiousness of the article itself.

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MEMORY, ASSOCIATION, ATTENTION.

Experimentelle Beiträge zur Lehre vom Gedächtnis. ADOLF POHLMANN. Berlin, Gerdes und Hödel, 1906. Pp. 191.

This monograph presents the results of a study which is for the most part a more careful and extensive re-investigation of some memory problems that were already familiar. Besides verifying the results of previous investigators on a number of points, the author adds much to the analysis of the relation of the various conditions upon which the amount that can be recalled depends.

His presentation falls into three parts. The first considers general matters of method. The second gives his results on the influence of localization on the amount that can be recalled, meaning by localization the association of a term with its position in the group of stim-

uli as presented. The third presents the results on the influence of the method of presentation of the material, whether it is auditory, visual, motor or different combinations of these.

His procedure was essentially that of the memory span method. The percentage of the number of terms of a group of stimuli correctly recalled was taken as a measure of the memory permanency. He lays some stress on the advantages of this way of measuring memory over others that have been used. His subjects were school children, ages 9-14 years, and a small number of seminar students. The results of the first tests are arranged according to the material used (nonsense syllables, two-place numerals, consonants, and nouns), age, general school grade, and sex. They offer little that is new to memory studies.

To determine the effect of the association of the term with its position in the group five different series of tests were given. In each series a comparison was made between the amounts that could be recalled for two ways in which the group of stimuli was presented. In one the conditions were made favorable for associating each term of a group with its position in the group, and in other ways. In the other the conditions for such associations were made unfavorable. In every instance of his general averages considerably more is recalled under the former conditions of presentation. Introspective evidence corroborates the objective results of the tables. The favorable effect of subgrouping the group of stimuli is greater in the visual presentation than in the auditory. Further, for subjects of a non-visual ideational type the effect of subgrouping largely disappears. The general indication is thus that the association of a term with its position in the group occurs in visual terms. He notes a general tendency in auditory presentation to arrange the terms of a group in a visual spatial order.

The relation of the amount recalled to the method of presenting the material was tested with different kinds of material. In the different series the presentation was (1) visual, (2) auditory, (3) simultaneously visual and auditory, (4) simultaneously visual and vocal, the subjects naming the terms aloud as they were presented visually. The differences in the amounts recalled for the auditory and for the visual methods of presentation are not very great in the general averages, but they are quite uniform throughout his tables. The main results indicate that, in general, auditory presentation is better for younger children than the visual, and is better than the visual if the material is familiar. For older children and for unfamiliar material the visual is

better. In interpretation of this double relation to age and kind of material he suggests (1) that for younger children school methods of teaching lay greater stress upon auditory processes, whereas with older children teaching proceeds more by visual methods. The age difference thus reduces itself to a difference in the amount of practice for the two senses. (2) In auditory presentation the sound stimuli enforce themselves upon the attention more readily than do the visual in visual presentation. (3) In auditory presentation it is easier to translate familiar material into visual terms than it is to thus translate unfamiliar material. (4) The visual preception of unfamiliar material is easier than its auditory perception, whereas this difference does not exist for the familiar.

The comparison of the amounts recalled for the other combined methods of presentation does not show a uniform and decisive difference.

The Psychology of Association. FELIX ARNOLD. Archives of Philosophy, Psychology and Scientific Methods, No. 3; April, 1906. Columbia University Contributions to Philosophy and Psychology, Vol. XIII., No. 4. Pp. 80.

The writer gives first a critical consideration of the data in which association is to be found, with special reference to the relation of association and the unity of consciousness. In this he discusses activity, emotion, and cognition, with the general outcome that all consciousness is present consciousness, and all consciousness is consciousness of an object. Thus there is no consciousness of self-activity. In introspection we do not observe a past mental state. In emotion we are conscious of our body in a special way, and as an object. In cognition, in the perception of an object, there is no consciousness of mental activity. The image is equally an object of consciousness, to which a different attitude is taken. Having reached this general result, the writer turns to consider the question how unity of consciousness under these circumstances is possible, and whether atomism is a necessary outcome of any associationist's theory. He finds two kinds of unity: (1) The unity of concomitance, in which a single background — the visual field or the bodily feelings — holds together the discrete elements. (2) Serial unity, represented by the meaning, in the present moment, each succeeding state in a series attains through being given position in the series. Both kinds of unity already imply association, and atomism is thus not the outcome of association, but, on the contrary, would be the result if there were no association. This discus-

sion serves as introduction to a more special consideration of association. He next reviews: (1) The treatment of association by the English writers, especially Locke, Berkeley, Hume, Hobbes, and the Mills; (2) the results obtained by German and American experimentalists, in the main, Wundt and his associates. In general, the former have been in quest of laws of association, while the latter have pointed out that the so-called laws of Aristotle and the English writers are not basic, are not laws, but forms of association, of which the experimental data show a very large variety. With this the question becomes whether it is possible to establish any laws of association. He examines the reduction of association by similarity to association by contiguity, and *vice versa*, and finds that each involves a confusion that results from a mixture of different points of view. The reduction of similarity to contiguity involves a fallacy consisting in a 'mixture of the physiological and logical points of view, in the explanation of a psychological occurrence.' The attempt to reduce contiguity to similarity confuses, he thinks, the physiological and genetic standpoints. In his own interpretation of the simple fact of the succession of two associated mental states he offers the 'law of redintegration' as ultimate. This he states as follows: "Any element tends to reinstate the entire moment of which it previously constituted a part, which moment tends (1) to diffuse itself along some one of the paths which have been already formed; and (2) to leave a trace of itself as a whole for future revival and development."

In the reviewer's judgment nearly the first half of the study is not of such a nature as to come within the limits of a *scientific* treatment, and is thus not covered by the title. On the other hand, a large portion of the results of memory studies that could hardly be neglected in a presentation of the psychology of association is not considered. Both, however, are only defects of title and do not detract from the value of the study otherwise.

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Ueber sogenannte 'frei steigende' Vorstellungen und plötzlich auftretende Aenderungen des Gemütszustandes. Sind die Verbindungsglieder, welche hierbei in Frage kommen, unbewusst oder unbemerkt? F. KIESOW. Arch. f. d. ges. Psychol., 1905, VI., 357-390.

The old question of 'mediate' association is again taken up somewhat at length by Herr Kiesow, who, to aid him in his arduous labor,

called into service the various observations of his wife, the latter furnishing the examples on which he worked.

Before discussing his paper I should suggest a change in the name of the terms used in this connection. 'Free revival' a literal translation of '*frei steigende*' is in English an equivocal term. It includes the case in which association operates in the recall of a self-sufficient idea, as opposed to fusion, assimilation and complication. I should suggest the expression 'spontaneous rising' of ideas as the equivalent of '*frei steigende*,' in discussions of mediate association.

Herr Kiesow's conclusions are not startling, but his examples are good, and in addition they form very interesting reading, giving as they do some insight into the household economy of a German psychologist.

Herr Kiesow concludes that there is no spontaneous rising of ideas, that there can be no revival without association (p. 370), and as to whether the mediating members are marginal or subconscious, the author concludes, after mature deliberation, that they must be marginal, as the examples show. He also concludes that determining features are the feelings and dispositions roused on such occasions.

It seems rather harsh to criticise adversely a study in which every thought of the psychologists concerned was centered on the result, in which even culinary arrangements were subordinated to the psychological aim. But do not the various observations, which are exceedingly naive, seem to indicate that instead of an intense introspective analysis we have rather portions of a *journal intime* spiced with occasional psychological expressions, as, 'mental,' 'reflection,' 'mind,' etc.?

What is absolutely lacking in this and in other similar studies is a rigid examination of the actual moment of consciousness present in moments of association. The old sausage-link idea of consciousness set forth by Hartley and Hamilton (who first mentioned mediate association), is assumed in such investigations, and then the theory is made to fit this standpoint. By a kind of psychologist's fallacy, the *result* of association, *i. e.*, explication of a disposition in serial order, is considered as the *prior* state of affairs in consciousness, and the question in mediate association is then to find the missing link. But as a matter of fact there never was such a link in any present moment of consciousness. This process of logical reversion does not exist psychologically in the present moment. If we consider that in the present moment of consciousness there is present a disposition with meaning, with concomitant attitude, with a tendency forward and fromward,

which may become serially realized at any part of the system, then it seems more evident that mediate association is not only not a problem, but also a myth, a relic of the logical fallacy of the English psychologists. Any study which bases its conclusions on the link idea of consciousness seems to me to be of worth only in showing to how great a length incorrect notions can sometimes go. This dilettante method of investigation seems to me to require a more strenuous backing of intensive analysis, of *existential* meaning, before the *formal* aspects are so positively enumerated.

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The Psychology of the Simple Arithmetical Processes: A Study of Certain Habits of Attention and Association. CHARLES E. BROWNE. *Am. Journ. of Psychol.*, 1906, XVII., 1-37.

The substance of this article is a discussion of the introspection obtained from eight subjects on their processes in adding, subtracting, multiplying, and dividing, under very simple conditions. In addition to characteristic details for the individual subjects, the author believes that he finds certain general principles involved in the processes of all. The most important of these may be restated as follows:

1. The addition process is derived from the counting process, as is shown by the fact that successive sums are formed with ease inversely proportional to their difference, *i. e.*, to the value of the added digit; which would follow naturally from the condition that the strength of association between numbers varies with their distance apart in the number series, conformably to the laws of Ebbinghaus for successive syllables.
2. The motor representation of the sum and new digit in continued addition is extremely important, as leading over directly to the motor representation of the new sum, through direct associations formed in previous learnings of addition tables.
3. Simple subtraction is at first a process of adding in reverse order, and therefore more slow and difficult than addition, since the associations are more feebly operative backwards. But it soon becomes a process of direct association by the habitual joining of definite digits in this way. (On this point, however, the author is somewhat obscure.) Subtraction in which borrowing is involved is simplified by adopting the older method of adding to the subtrahend, since the borrowed term is thus kept in representation through fewer successive steps in the process.

4. Multiplication is abbreviated addition, but depends largely on direct association in the multiplication table. Division is a reversal of the multiplication process, but tends, even more than subtraction, to become a process of immediate association of digits. In written multiplication and division the writing of the digit in the product or quotient tends to become automatic and to occur while the processes leading to the next digit are going on.

The author apparently believes that the carrying and borrowing processes and the subtraction in division are, in all subjects, largely processes of visual representation.

The real merits of the paper are somewhat obscured by a too rigid adherence to an unwieldy topical scheme, which makes the reading hard and interpretation a little uncertain in places.

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On a New Method for the Study of Concurrent Mental Operations and of Mental Fatigue. W. McDOUGALL. *British Jr. of Psychol.*, 1905, I., 435-445.

Experiments on the distraction of attention have usually been conducted by having the subject perform two mental tasks concurrently (*e. g.*, to add figures spoken to him while he recites verses), or by comparing work done under the influence of disturbing sensory stimuli with work done in its absence. These methods have two drawbacks: (1) they do not guarantee the uninterrupted direction of attention to one task, and (2) they do not provide an objective record of breaks in the attention-process that would enable us to study the way in which the attention is distributed between the two tasks. The following method overcomes these drawbacks (1) by demanding a continued maximal voluntary concentration of attention, and (2) by giving a graphic record of any failure of continuity of attention and also an objective measure of the accuracy with which the task has been performed. It can be applied to a number of interesting problems such as mental fatigue and recuperation, and the influence of drugs and of sleep upon capacity for mental work.

The apparatus consists of a brass cylinder covered with a sheet of white paper on which are eight parallel rows of small red spots, each row surrounding the cylinder. The subject sits before the cylinder as it rotates carrying the rows of red spots vertically downwards. His task is to mark each spot in one row with the point of a stylograph containing black ink. The red spots succeed one another at a vertical

interval of 5 mm. The spots in any one row form an irregular zigzag line, so that the subject, in aiming the stylograph at each oncoming spot, has to move it a little to one side or the other. Each row has 120 spots, and as the spots are 5 mm. apart in the annular direction the subject has the same fraction of a second for the accomplishment of each aimed stroke. The extreme lateral deviation of the spots in any one row is 10 mm., but no spot deviates from the line of its predecessor by more than 5 mm. Within these limits the succession of spots is as irregular as possible, so that the subject cannot learn the order of the deviation of the spots. The difficulty of the task depends upon the rate of movement of the cylinder; it remains the same as long as the velocity does not change. The subject sees and marks the spots as they appear through a horizontal slit.

In studying the concurrent or intercurrent performance of two different mental operations the subject is set to mark the spots while the cylinder revolves at a rate which requires a maximal effort of attention. At the same time he is set another task, *e. g.*, reacting with the left hand to auditory signals. These reactions are also recorded on the drum. Thus the degree of reciprocal interference of the two processes may be studied.

The rest of the paper reports experiments upon the influence of fatigue, of drugs and of rest upon capacity for mental labor.

The errors of marking were reckoned thus: the complete omission of a mark or an extra mark between two spots was reckoned one error, and a lateral deviation of the mark of more than 1 mm., or a vertical deviation of more than 2 mm., was reckoned half an error. The width of the slit in the screen was kept at 15 mm., and the rate of rotation of the cylinder varied between one revolution in 23.8" and one revolution in 23.1".

The results of a series of experiments to determine the influence of fatigue during one day are as follows: Paper marked at 8.15 A. M. total errors 80. Repetitions at 15-minute intervals until breakfast at 9.30 show a general increase in errors, 125 being the greatest number. Paper marked at 10.15 A. M. total errors 66. Lunch at 1.30 P. M. The first experiment after lunch at 3.15 gave total errors 65, the smallest number during the day. After this the errors gradually increased until at 11.15 P. M. there were 157 errors.

Two similar sets of experiments show the influence of alcohol and of tea. The following table gives the totals of errors for these drugs and without them. The first experiment in each series took place early in the evening and the others followed at 15- or 20-minute in-

tervals. On the first evening no drug was taken. On the second evening 3 oz. of whiskey in warm water was taken, and on the third evening 2 cups of tea. After 5 days three similar series of experiments were made on three consecutive evenings, but the amount of the drugs was decreased to 1 oz. of whiskey on the second evening and one cup of tea on the third evening. The effects of these drugs appear very clearly in the following table. These figures represent the totals of errors under alcohol and tea and without drugs. The first row of figures gives the total number of errors in the experiments on the first three evenings, and the second row of figures gives the errors on the second three evenings:

	Normal.	Alcohol.	Tea.
First series (4 papers marked)	379	583	273
Second series (3 papers marked)	298	351	291

TABLE SHOWING INFLUENCE OF SLEEP.

Paper marked at 6.45 p. m.	108
Paper marked at 7.45 p. m.	85
Between 7 and 7.30 sleep was taken.	

The onset of fatigue differed greatly in individual cases.

The tendency of this process to become mechanical can be overcome by marking alternate spots.

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PATHOLOGICAL.

Psychiatry: a Text-book for Students and Physicians. STEWART PATON. Philadelphia and London, J. B. Lippincott Company, 1905. Pp. xii + 618.

American psychiatry was formally born with the appearance in 1812 of Benjamin Rush's classic *Medical Inquiries and Observations upon the Diseases of the Mind*; its youngest child is Paton's book, to which may also be applied a remark in the publisher's announcement of Rush, 'the work is valuable and highly interesting for intelligent readers of every profession.'

Paton is a disciple of the newer gospel in psychiatry, which is seeking to free itself from the traditional dogmatic-symptomatologic teaching of the past, so strongly tainted with metaphysical and even theological speculation, and to establish itself upon the foundation of scientific accuracy.

In the order of his book the author follows the routine of most psychiatric writers in devoting the introductory chapters to general con-

siderations of etiology, symptomatology, etc., after which the various disease groups are taken up. It may be disappointing to students and to other readers, who are not widely informed in mental diseases, to find here so frequent expression of uncertainty, so many chapters ending without conclusion, some subjects being represented by the mere statement of varying opinions. This to the student may indeed prove a disadvantage, — to a certain number of students at least. What is, however, true of all the biologic sciences, — that the status of knowledge is in constant flux — is very particularly true of psychiatry; and not only so, but in this department especially is the total number of established and accepted facts disappointingly small, when compared with those known in other branches of medicine. This is an important although unwelcome truth and it is one of the merits of the book under consideration that it is not categorical, that it does not treat the subject of insanity as if it were a closed chapter in medical science, that often in a given subject it sets forth various possibilities and there leaves the question.

Psychiatric literature of recent years, particularly from the viewpoint of refined scientific clinical analysis, is stupendous, and to all this Paton has endeavored to be true, so that his work may be said to contain an epitome of the opinions of many of the more conspicuous current writers, especially in Germany, in which country at present psychiatric activity is far and away greater than anywhere else in the world. This manner of treatment is agreeable to one somewhat familiar with the subject, and will be appreciated by the student raised to the discipline of individual and research work. It is a question, however, whether the book would not render greater service to the general medical student if it were made a little more direct and personal, reflecting more of the author, perhaps even at the expense of overlooking some of the other cited authorities.

From the Greeks and Romans we have inherited the belief that insanity could be roughly resolved into three fundamental disease-conditions, and the names for these conditions — mania, melancholia, and dementia — have likewise been handed down from the Greco-Roman period. That this is not the whole story, or indeed the true story, only the psychiatry of later years has definitely pointed out, and to this end Paton's work is a valuable contribution. The need for work in the new direction can be appreciated when it is remembered that in New York state, which leads the others in the organization of psychiatric teaching, all the state hospitals are still officially pledged to the Greco-Roman classification imposed upon them by the Lunacy

Commission in 1838, the classification being modified merely by the adoption of Circular Insanity from the French and Paranoia from the Germans, and by the subdivision of dementia.

Paton compares the methods of teaching in this country with those in vogue in Germany, and emphasizes the urgent necessity of establishing psychiatric clinics here in connection with the various universities, which shall be on the same footing with the medical, surgical, neurologic, pediatric clinics, etc., and whose director shall occupy the chair in psychiatry on the University Faculty. This is the only way in which the level of American psychiatry can be materially raised. The movement has already been initiated, and to Ann Arbor belongs the credit of having opened the first university psychiatric clinic in this country.

The modern psychologic viewpoint in psychiatry is another subject upon which Paton lays special stress. As is well known, the relations between the alienist and the psychologist as specialists are none too close in any country, and particularly in America is the need indicated for a nearer *rapprochement* of the two sciences. The importance and value of the psychologic experiment as applied to mental cases has been sufficiently demonstrated, and the psychiatry of to-day is largely the work of alienists who are psychologists as well, of men of the stamp of Wernicke, Ziehen and Kraepelin.

In his grouping of the psychoses, Paton follows somewhat closely the Heidelberg school. Mania and melancholia, the two main diseases of the antique classifications, preserved in the nosographic schemata of Cullen and Chiarurgi, and introduced to the modern stage by Pinel, are not recognized by the newer teaching as separate and distinct disease-entities. Certain of the cases previously so classified have been found by a careful study of their 'clinical course,' which embraces the life-time of the patient, to belong to a peculiar dementing process, to which Kraepelin, adopting the term from Morel, has given the name 'Dementia Præcox.' Most of the remaining cases of both the mania and melancholia groups, have been brought together with the *folie circulaire* of Falret and Baillarger, into one category — *maniac-depressive insanity*, whose distinguishing character is that as a rule successive attacks occur during the lifetime of the individual, sometimes of a pure depressive or pure maniacal, sometimes of an alternating, and sometimes finally of a mixed type — without, however, terminating in any conspicuous mental reduction.

All of Paton's categories are styled 'disease groups' rather than disease-entities — thus indicating the imperfect state of our classifica-

tions, and allowing for the possibility of a future subdivision of the various forms. Following the Somatics, he gives an important place to various metabolic forms of alienation, devoting separate chapters to Myxædematous and Cretinous Insanity, Chronic Intoxications, including alcoholism, morphinism, cocainism, etc., and autointoxication psychoses. The latter would seem a rather questionable head under which to assemble together the febrile deliria and infection-psychoses, the so-called acute confusional states, the collapse delirium of Weber, the Amentia of Meynert, and the Syndrome of Korsakoff. Of the various epochal psychoses described by various authors, Paton retains only one group, including the senile or involuntional forms, of which he describes depressive, excited and paranoïd states, and Senile Dementia.

The book, considering its scope and method of treatment, is a condensed one — almost too condensed; but it serves efficiently to present the actual status of psychiatry as a science; it indicates clearly the distinction between fact and fancy in psychiatric analysis — a distinction which many writers have not sufficiently emphasized; it points out some of the more accessible points of attack in dealing with the modern problems of psychopathology; it sets forth the particular needs for the future development of the science in this country; it draws attention to certain anomalies of our social organization, the correction of which should closely accompany the diffusion of knowledge of the broader questions of modern psychiatry.

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Zur Frage der motorischen Asymbolie (Apraxie). K. HEILBRONNER. *Zeitsch. f. Psychol.*, 1905, XXXIX., 161-205.

Before attempting to describe the contents of this paper, I wish to state how I have translated some of the terms used by the author: kinæsthetic center = Sensomotorium; kinæsthetic nerves = sensible Nerven; nerves of the surface senses = sensorische Nerven; motor nerves = motorische Nerven; circular reactions = *Eigenleistungen* des Sensomotoriums. It is regrettable that the German terminology in this field is so terribly awkward, a result, obviously, of the rather limited interest which the creators of this terminology took in normal psychology.

Aphasia is the generally adopted term for loss of or disturbances in word ideas, or the nervous functions corresponding to word ideas. Asymbolia is a more recent term for loss of or disturbances in objec-

tive ideas (as contrasted with word ideas), *i. e.*, ideas referring to objects or objective (*e. g.*, spatial) conditions. As aphasia may be either of various kinæsthetic forms or of a surface-sensory nature, so asymbolia may be kinæsthetic asymbolia or surface-sensory (*e. g.*, visual) asymbolia. The former kind of asymbolia is called apraxia, the latter agnosia; and the patients apractic and agnostic (the epistemologists will pardon us for the use of this word!). The symptoms of asymbolia, as of aphasia, are to be found, of course, in motor irregularities. The irregularity, as the author emphasizes, may be of one or the other kind: either a disturbance of a certain movement, or a substitution of a perfect but non-adaptive movement for the one to be expected. It is an entirely irrelevant question whether the subject is conscious or not conscious of his action or of any purpose of this action. What is of interest here is the causal connection between sensory stimulations and motor results, not consciousness, which may or may not accompany the act. The idea which comes to be the most prominent in consciousness is not always the one which determines the particular muscular activity. The subject may consciously decide in favor of one thing and yet do the other. Nor is the concept of 'attention' helpful in our comprehension of the pathological phenomena in question. These patients are usually rather attentive when examined, but exhibit their irregularities of reaction none the less. And the special direction of their attention might perhaps rather be regarded as a part or consequence of their inability to act than as the cause of this inability. The patient who, when made to fall upon his knees, continues — through a circular reaction, the kinæsthetic center being unimpaired — a familiar action by folding his hands and raising his eyes for prayer, need not on that account be conscious of an intention to pray. The fact that a patient puts a piece of bread into his mouth does not prove that he has recognized it as bread. The professor, apractic from mere absent-mindedness, who counts the pulse beats of a frog and then throws his watch into the pond and puts the frog into his vest pocket, does not become better understood by us if we decide whether he mistook his right hand for his left hand or the frog for his watch. Thinking of the subject as a self-conscious ego does not aid us in our comprehension of such phenomena. Liepmann's definition of the difference between agnosia and apraxia ought therefore to be modified by omitting his reference to self-consciousness. Liepmann defines the difference by saying that the agnostic's non-adaptive movements result from his *consciousness of non-adaptive aims*, the apractic's non-adaptive movements from his *inability to*

realize his aims. But what is meant here by 'aim' is clearly the complex of ideas in the spectator's consciousness which the spectator regards as the patient's aim, not necessarily any definite state of consciousness of the patient himself. *E. g.*, in the complex 'shooting with a gun' either one of these ideas can be regarded as the starting point of thought or the aim *by the spectator*; but to understand the patient's action we should simply state that they coexist, without calling them by either of these names. Or another instance: we simply cause confusion if we raise the question whether the patient's action in filling his tumbler with dirty water from the wash-basin was purposive or aimless. It is the causal connection between stimulus and reaction which interests us, not the patient's consciousness as such.

As the result of a critical study of cases like those just mentioned, the author recommends that the symptoms of *asymbolia* be classified under the four heads of cortical apraxia, transcortical apraxia, conductive asymbolia (*Leitungsasymbolie*), and agnosia.

1. *Cortical Apraxia.*—Circular reactions are impaired. This seems to be the same as Meynert's 'motor asymbolia.' Anatomically speaking, there is a lesion entirely within the kinæsthetic regions of the cortex. Such a lesion has not been anatomically demonstrated, but from clinical observations appears to be possible. All classes of movements are disturbed, circular reactions as in eating, rising from a chair, etc., as well as strictly voluntary actions, *i. e.*, actions which are not memorized series of muscular activities.

2. *Transcortical Apraxia.*—The kinæsthetic center itself is intact. Circular reactions take place easily. *E. g.*, the patient continues to smoke a cigar put between his lips, swallows what is put into his mouth, buttons up his coat when his fingers are placed at a button, puts a comb like a pen-holder behind his ear after getting it accidentally into the neighborhood of the ear. But *voluntary acts are greatly impaired*, perhaps entirely impossible. And the patient is unable to continue one of the serial acts just mentioned after having been interrupted, *i. e.*, after the circular reaction has been broken. The partial isolation of the kinæsthetic center from the other (surface-) sensory centers makes the ordinary control of the circular reactions impossible. *E. g.*, while the patient's left hand is still filling a tumbler with water, the right hand moves the tumbler towards the mouth.

3. *Conductive Asymbolia.*—The characteristics of this form of asymbolia are *substitution of non-adaptive movements* for the expected movement (*e. g.*, grasping the object before the eyes instead of the

object called for) *and continuance of a position once assumed*, there being no initiative for a change of position (*e. g.*, the patient keeps numerous articles in his hand after they have once been put there). Disturbances of movement are rare or entirely lacking. This form of asymbolia seems to be by far the most common, and its symptoms most variable.

4. *Agnosia*.—This form may be regarded as a composite of mind-blindness, mind-deafness, etc. Irregularities of movement are here purely secondary phenomena.

The first two forms of asymbolia may be restricted to one hemisphere; the latter two are the result of a diseased condition of both hemispheres. The author does not mean that any of these four kinds of asymbolia may easily be observed in a pure form. He admits, on the contrary, that transcortical apraxia and conductive asymbolia are not well separable even in theory, and that mixed forms are much more likely to be found than pure forms. He recommends his classification because he believes that the relation between stimulus and reaction in these pathological cases can thus be most easily understood.

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PHILOSOPHY.

The Limits of Evolution and Other Essays Illustrating the Metaphysical Theory of Personal Idealism. G. H. HOWISON. Second edition. New York and London, The Macmillan Company, 1905. Pp. lviii + 450.

The seven essays contained in this volume present a decidedly bold system of philosophy, original in important respects. Prepared at various times, from 1882 to 1899, and for different occasions, and dealing with a variety of topics, including evolution, German philosophy, modern science, art, religion, immortality and freedom, they embody nevertheless a well articulated metaphysical theory. This, the author's primary aim, he was able to attain chiefly because his system was outlined in his mind from the outset, and merely received fuller specification as time went on. The book thus gives an adequate, though, of course, not a systematic view of personal idealism. It should be added that the essays are thoroughly readable, dealing, as they do, keenly and profoundly with problems of great significance, and employing a style finished in its phrasing, and spiced with neologisms whose aptness will justify them to all but extreme

purists. The second edition has a preface of its own and five appendices, in which Dr. Howison further elucidates positions that have been misunderstood, and undertakes to meet criticisms passed by reviewers, Mr. McTaggart's critical notice being considered in the final appendix.

The system can best be characterized as a modified monadology on a transcendental basis, completing, if adopted, the return of Kant to Leibnitz. The only realities are minds, and the item and order of their experience. These minds do not affect one another in the way of efficient causation, but some experience is an intrinsic part of the constitution of each, and is ordered by the *a priori* activities, which constitute a mind's substantial being; hence matter and its laws. If I understand Dr. Howison, sense cannot reach from mind to mind: so far they are windowless. But their walls are translucent — the author would probably say transparent — to reason. And accordingly, each mind can, and rationally should, order its sense world in coöperation with all other minds. The orderliness of Nature, he would probably say, suggests that there is, even now, an appreciable amount of coöperation. Among the minds recognized by necessity of reason is the one eternally perfect mind, God: who thus influences the course of natural events solely through the free and reasonable deference to his ideal judgments shown by finite minds, but in that way he is supremely influential. So much for a brief reminder of the main points of the system, which may be assumed to be familiar, at least in outline, to most readers. It fulfills admirably the inspiring dream which presents us wholly free from without, our intercourse with one another being entirely an affair of pure reason untainted by sense.

The author is earnestly aware of the great practical issues at stake. But the proof he offers is coldly intellectual, wholly a matter of logic. It deserves careful and critical consideration.

Dr. Howison's system is founded on the apriority of time, space and the other 'self-active forms of consciousness, . . . that in their unity constitute the substantial being of a mind, in distinction from its phenomenal life.' The proof of this apriority closely follows Kant, with omission however of his redundancy and weaker arguments, and deals chiefly with time as the typical case. The rich resource of learning and the careful elaboration with which the author draws his conclusions from this fundamental promise, cannot, of course, be given in detail, but brief suggestions may be offered, together with indications of some difficulties that occur to me.

With time as the product and creature of our minds, Dr. Howison considers our immortality established. Using his terminology, I should say that our eternity is well made out, but our everlastingness is not so plain.

"The entire proof of our being free lies in showing that we . . . do *originate* judgments, and judgments that are necessarily *true*: . . . we do cognize principles *a priori*, that is *spontaneously*, and not because we are so 'framed' by some other being, or so impelled 'from without,' that we cannot do otherwise." But does this, at most, do more than show us to be free *in these judgments*? May we not be, are we not plainly, trammelled in many other ways? Dr. Howison, to be sure, holds that our *a priori* activity constitutes our substantial being, but I have found no proof that it exhausts that being. Can we look upon the rich array of activities, making up temperament, and differentiating man from man, as belonging merely to the 'phenomenal life' of each? Or, can we admit freedom so absolute as to exclude entirely efficient causation from man to man?

Freedom, on full scrutiny, is found to imply at once *self-definition* and *self-definition*. But full definition implies contrast with other selves, who must be real if the self involved is to be real and really free. So freedom carries with it the validity of conscience, or the recognition of others, equally real and free with ourselves, in sufficient number thoroughly to individuate and define each of us, 'ten thousand times ten thousand, a great multitude which no man can number.' And supremely essential to the defining contrast is the *eternally* perfect being, God, who is real if we are and are free, as we have been shown to be. Thus reason penetrates the shell of the self, and assures us that there are other selves. But can reason, without empirical aid, prove more than *that* others exist, with qualities differencing them from us? Can it unaided discover the greatly differing combinations and permutations of qualities grouped in the myriad selves? And without such knowledge coöperation would hardly be possible, and this would become a chill world, emptied of touch and sympathy with the joys and sorrows of our fellows.

In short, freedom pushed so far as to deny efficient causation among selves, seems to me to encounter very serious practical and theoretical difficulties. Besides the latter difficulties already mentioned, we may remind ourselves that efficient causation among selves and quasi-selves is embedded deep in the continuously tested and intimately interrelated whole of common sense and scientific human knowledge. This painfully wrought structure, submitted for untold generations to

unremitting tests, may be a castle in the air, but before admitting it to be unfounded very rigorous and substantial reasons should be called for.

The substitution of a doctrine of qualified freedom would enable many Kantians to accept the system with its important developments of the transcendental philosophy. But even those who cannot accept it unmodified, will be grateful to the author for his strong and penetrating thinking, and for the important contributions he makes to philosophy, especially for his version of the pluralism that is assuming so significant a place in the thought of the day.

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Content and Validity of the Causal Law. BENNO ERDMANN.
Phil. Rev., XIV., 138-165.

The purpose of the paper is to seek a basis for the different methods employed in the sciences of fact. The Greek philosophers believed the fundamental connecting link of all things to be ideas. No successful investigation of this doctrine was made until the time of Hume and Kant. Both concluded that the connection between causes and effects is not a rational analytic, but an empirical synthetic one. Hume thought the connection between cause and effect to be the empirical effect of association. Kant held that it rests upon an inborn uniformity of our thought, and hence is independent of all experience.

It is maintained by the writer:

First. The *presupposition* of all inductive inferences is that the contents of perception are given to us *uniformly* in repeated perceptions, *i. e.*, in uniform components and uniform relations.

Secondly. The *condition* of the validity of the inductive inferences lies in the thoughts that the same causes will be present in the unobserved realities as in the observed ones, and that these same causes will bring forth the same effects.

Thirdly. The *conclusion* of all inductive inferences has purely problematic validity, *i. e.*, their contradictory opposite remains equally thinkable. They are, accurately expressed, mere hypotheses, whose validity needs verification through future experience.

After all has been said on the causal law, both by the empiricist and by the rationalist, there has never been any explanation or proof of the existence of a *dynamic dependence* of the effect upon the cause, Such a dependence has been held throughout the history of philosophy, and the empiricist has endeavored to explain it by the sense of self-perception. But such an attempt is superfluous and misleading. It

only complicates the question by duplicating the given, quite after the fashion of the Platonic Doctrine of Ideas.

The article of which the above is a summary is the first of a series of articles on the 'Content and Validity of the Causal Law.'

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ETHICS.

De la méthode dans les recherches des lois de l'éthique. GUSTAV SPILLER. Rev. Philos., 1905, LIX., 35-45.

In his discussion of the method to be used in ethical research, the author lays great stress on the need of a scientific investigation of moral laws. For moral hypotheses, he says, cannot be verified by personal experience alone, since this makes neither for progress nor for certainty in ethical matters. He proceeds to give a detailed account of how the scientific method, consisting of scrupulous observation and systematic experimentation, may be applied to the study of morals. By this means alone can accurate or reliable knowledge on the subject be obtained. The scientific moralist, then, instead of creating an ideal type in accordance with his own ideas and environment, will make an exhaustive study of man as a moral being in the past and present, bearing in mind the influence on him of varying conditions, physical, psychological, political, intellectual, etc.

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BOOKS RECEIVED FROM AUGUST 5 TO SEPTEMBER 5.

Behavior of the Lower Organisms. H. S. JENNINGS. New York, Columbia Univ. Press (Macmillan Co., Agents), 1906. Pp. viii + 366.

Les auto-mutilateurs, étude psycho-pathologique et médico-légale. CHARLES BLONDEL. Paris, Libr. Médicale et Scientifique. Pp. 132.

The Analysis of Racial Descent in Animals. TH. H. MONTGOMERY. New York, Holt, 1906. Pp. xi + 311.

A Non-Surgical Treatise on Diseases of the Prostate Gland and Adnexa. G. W. OVERALL. Chicago, Rowe Pub. Co., 1906. Pp. 228 + 10.

Report of the Commissioner of Education for the Year Ending June 30, 1904. Vol. 1. W. T. HARRIS. Washington Gov. Print. Office, 1906. Pp. civ + 1176.

Institut Solvay: Travaux de l'Institut de Sociologie. Notes et Mémoires. Fasc. (1) *Formules d'Introduction à l'Énergétique Physio- et Psycho-Sociologique.* E. SOLVAY. 1906. Pp. 26.
 (2) *Esquisse d'une Sociologie.* E. MAXWEILER. 1906. Pp. 306.
 (3) *Les Origines naturelles de la Propriété.* R. PETRUCCI. 1905. Pp. 230. (4) *Sur quelques Erreurs de Méthode dans l'Étude de l'Homme primitif.* L. WODON. 1906. Pp. 37.
 (5) *L'Argent et l'Anthroposociologie.* E. HOUZÉ. 1906. Pp. 117. (6) *Mesure des Capacités intellectuelle et énergétique.* CH. HENRY. Remarque additionnelle par E. WAXWEILER. 1906. Pp. 75. (7) *Origine polyphylétique, Homotypie, et non-Comparabilité directe des Sociétés Animales.* R. PETRUCCI. 1906. Pp. 126. Bruxelles & Leipzig. Misch & Thron, Éditeurs.

Fortschritte der Kinderseelenkunde, 1895-1903. 2^e verb. Auflage. W. AMENT. Leipzig, Engelmann, 1906. Pp. 76.

NOTES AND NEWS.

MISS MATILDE CASTRO, Ph. D. (Chicago), has been appointed instructor in philosophy at Vassar College, in place of Miss Grace Bruce, who goes to Columbia University to resume her work for the higher degree.

DR. HARVEY CARR, of the University of Chicago, has been appointed instructor in psychology in the Pratt Institute of Brooklyn to succeed Dr. Irving King, who goes to the University of Michigan.

DR. W. K. WRIGHT, of the University of Chicago, has been appointed instructor in psychology and philosophy in the university of Texas to succeed Dr. Warner Fite, whose call to Indiana University was noted last month.

DR. J. E. W. WALLIN, instructor in philosophy at Princeton University, has been appointed professor of psychology and pedagogy in the State Normal School at East Stroudsburg, Pa.

WE learn from *Science* that the series of stereoscopic cards to accompany the exercises in Professor Titchener's 'Experimental Psychology' has now been published and may be obtained of the Chicago Laboratory Supply Company.

THE following are taken from the press :

DR. W. B. SMITH, recently elected to the chair of philosophy at Tulane University, will spend the coming year in Europe on leave of absence. His place will be filled meanwhile by Dr. Percy Hughes, instructor in philosophy at the University of Minnesota.

THE George Combe lectureship in general and experimental psychology at the University of Edinburg will be filled by Dr. W. G. Smith, who withdraws from his position as lecturer in experimental psychology at Liverpool University.

J. W. SLAUGHTER, Ph.D. (Clark), will deliver a special course of lectures on psychology at London University through funds provided by a donation of Mr. Martin White, which also provide for lectureships in sociology and ethnology.

